VII. CLAIMS

What is claimed is:

1. An apparatus for aligning a vehicle hitch mounted on a vehicle to a tow hitch of a trailer, comprising:

means for emitting a light beam;

means for securing the means for emitting the light beam to the vehicle;

means for energizing the means for emitting the light beam;

a reflective member; and

means for receiving the light beam from the means for emitting the light beam and reflecting the light beam from the reflective member toward the trailer for forming a tow hitch alignment point on the trailer for aligning the vehicle hitch to the tow hitch.

2. The apparatus of Claim 1 wherein the means for emitting the light beam is a laser pointer, the laser pointer having an elongated body having a light source actuator and an opening in the elongated body to allow the light beam to exit the elongated body.

3. The apparatus of Claim 2 wherein the light source actuator is located along the exterior of the elongated body and, upon depression of the light source actuator into the elongated body, the light source actuator activates the means for emitting the light beam for releasing the light beam through the opening and into the means for receiving the light beam.

4. The apparatus of Claim 1 wherein the means for securing the means for emitting the light beam to the vehicle is a housing, the housing having a column for receiving the means for emitting the light beam.

5. The apparatus of Claim 4 and further comprising magnets mounted on the housing for securing the housing to the vehicle.

6. The apparatus of Claim 4 wherein the means for energizing the means for emitting the light beam is a slip ring, the slip ring forming a portion of the column that covers the exterior of the means for emitting the light beam, the slip ring traversing the exterior of the means for emitting the light beam and depressing the light source actuator into the elongated body of the means for emitting the light beam.

7. The apparatus of Claim 1 wherein the means for receiving the light beam from the means for emitting the light beam comprises a gravity orientation balancer and a pair of wheels, the orientation balancer and the pair of wheel enabling the light beam reflecting from the reflective member to be maintained in a horizontal plane.

8. The apparatus of Claim 7 wherein the gravity orientation balancer has a top surface further defining a channel therein, a bottom surface, and a pair of arms.

9. The apparatus of Claim 7 wherein the reflective member is frictionally received into the channel of the gravity orientation balancer.

10. The apparatus of Claim 9 wherein the reflective member forms an angle to the light beam released from the means for emitting the light beam.

11. The apparatus of Claim 10 wherein the angle is substantially forty-five degrees.

12. The apparatus of Claim 7 wherein the wheels have a center tube and an outer tube, the center tube separated from the outer tube by a plurality of ball bearings with dividers placed between each of the plurality of ball bearings, the center tube further defining a hollow opening.

13. The apparatus of Claim 12 wherein each arm of the gravity orientation balancer is fixedly secured within the hollow opening of the center tube of a corresponding wheel.

14. The apparatus of Claim 7 wherein the gravity orientation balancer, the reflective member, and the pair of wheels are housed within a hollow, transparent tube closed on one end by an end cap and secured to the housing by a connection member on the other end.

15. The apparatus of Claim 1 and further comprising an anti-collision device for measuring the distance between the vehicle and the trailer.

16. The apparatus of Claim 1 and further comprising an ultrasonic device for measuring the distance between the vehicle and the trailer.

17. The apparatus of Claim 16 wherein the ultrasonic device has a plurality of light emitting diode indicators, the plurality of light emitting diode indicators each representing a different distance to the trailer and providing the user an indication of how close the vehicle is to the trailer.

18. An apparatus for aligning a vehicle hitch mounted on a vehicle to a tow hitch of a trailer, comprising:

means for emitting light, the means for emitting light generating a light beam for producing a virtual tow point on the trailer;

means for automatically maintaining the means for emitting light and the light beam in a horizontal plane; and

a housing for securing the means for emitting light and the means for automatically maintaining the means for emitting light to the vehicle.

19. The apparatus of Claim 18 and further defining a means for energizing the means for emitting light.

20. The apparatus of Claim 19 wherein means for energizing the means for emitting light is a switch.

21. The apparatus of Claim 18 wherein the means for automatically maintaining the means for emitting light and the light beam in a horizontal plane comprises a free rotating mirror assembly for receiving the light beam generated from the means for emitting light and redirecting the light beam from the vehicle towards the trailer, the free rotating mirror assembly having an orientation balancer, a mirror, and a pair of wheels.

22. The apparatus of Claim 21 wherein the orientation balancer has a top surface further defining a channel therein, a bottom surface, and a pair of arms.

23. The apparatus of Claim 21 wherein the mirror is frictionally received into the channel of the orientation balancer.

24. The apparatus of Claim 23 wherein the mirror forms an angle to the light released from the means for emitting light.

25. The apparatus of Claim 24 wherein the angle is substantially forty-five degrees.

26. The apparatus of Claim 21 wherein the wheels have a center tube and an outer tube, the center tube separated from the outer tube by a plurality of ball bearings with dividers placed between each of the plurality of ball bearings, the center tube further defining a hollow opening.

27. The apparatus of Claim 26 wherein each arm of the orientation balancer is fixedly secured within the hollow opening of the center tube of a corresponding wheel.